

MECHANICALLY SCANNING TYPE ULTRASONIC PROBE

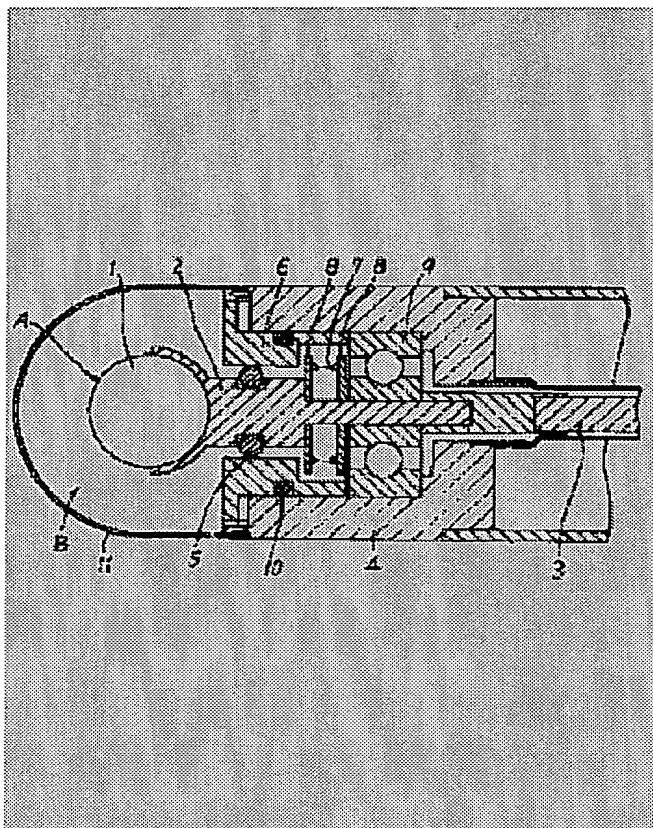
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Abstract of JP8112280

PURPOSE: To provide a mechanically scanning type ultrasonic probe wherein change in vol. of a sound medium caused by freezing can be effectively absorbed and a preliminary pressure can be given to the sound medium at an ordinary time for use.

CONSTITUTION: In a mechanically scanning type ultrasonic probe wherein an oscillator part assembly A with an oscillator 1 transmitting and receiving an ultrasonic wave is rotated in a medium room B filled with a sound medium of the apex part of the probe, a supporting means for supporting the oscillator part assembly A movable in the central axis direction of the probe and an energizing means 7 for energizing the oscillator part assembly A in the apex direction of the probe in such a way that when the second medium is liq., the inner pressure of the medium room B is held at a higher pressure than the ordinary pressure and when the second medium is coagulated, expansion of the vol. of the second medium caused by coagulation is absorbed.



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[0012]

[Embodiments] FIGS. 1, 2 are a sectional view showing the constitution of an essential portion of embodiment 1 of the present invention. In this embodiment, an oscillator part assembly A having an oscillator 1 and an oscillator holder 2 is rotatably supported via a bearing 9 for a rigid apex part 4 of an ultrasonic probe, and is slidably supported in an axis direction for an inner race of the bearing 9. An apex cap 11 is provided on the rigid apex part 4 so as to cover the oscillator part assembly A to form a medium room B, and the medium room B is filled with a sound medium. The apex cap 11 is formed of a material excellent in ultrasonic penetration, and is liquid-tightly sealed on the apex part of the rigid apex part 4. For example, a water soluble ultrasonic gel containing a large amount of water of about 70 to about 80% is used as the sound medium with which the medium room B is filled.

[0013] The oscillator part assembly A is connected to a flexible shaft 3 extendedly provided in the probe in a rear end part of the rigid apex part 4, and rotation torque from a drive part (not shown) provided on the hand side via the flexible shaft 3 is transmitted to the oscillator part assembly A.

Lubricant such as castor oil is preferably filled around the flexible shaft 3 so as to reduce rotation and friction resistance in the axis direction.